

What is claimed is:

1. In a control circuit of the type comprising a power supply, a shunt resistor and a controllable high-speed solid state switch device for connecting the power supply to a load device:

a detector having inputs connected across the shunt resistor and an output connected to control the state of the switch device;

said shunt resistor comprising an insulative support having parallel opposite faces, and first and second electrically continuous conductor traces disposed in overlying relationship on said opposite faces.

2. A circuit as defined in claim 1 wherein the detector is a comparator.

3. A circuit as defined in claim 1 wherein the detector is an electronic amplifier.

4. A circuit as defined in claim 3 further including a microcontroller having an output connected to the switch device and an input connected to receive the output of the electronic amplifier;

the microcontroller being operative to control the state of the switch device according to a signal developed across the shunt resistor.

5. A circuit as defined in claim 1 wherein the first and second traces have multiple legs on each of said faces.

6. A circuit as defined in claim 1 wherein the shunt resistor comprises third and fourth traces electrically continuous with the first and second traces.

7. A fast response control circuit comprising:  
an electronic switch device having an output circuit and an input circuit, a milliohm resistor connected in series with the output circuit;  
a detector having an input circuit connected across the shunt resistor and an output which changes state according to changes in voltages developed across the shunt resistor;

means connected to the output of the detector to control the switch device;

said shunt resistor comprising a dielectric support with first and second conductive traces printed in overlying parallel relationship on opposite faces thereof and a via through the support and electrically interconnecting the traces at one end thereof such that load current flows in opposite directions through the first and second traces.

8. An automotive accessory control circuit comprising an FET switch and a shunt resistor connected in series between a power supply and a drive motor;

a detector having inputs connected across the shunt resistor and an output which changes state in accordance with voltages developed across the shunt resistor;

a microcontroller having an input connected to receive the output of the detector and being programmed to provide an output which changes state in accordance with a change in state of the detector output; and

a FET driver connected to receive the output of the microcontroller for controlling the state of the FET switch;

wherein said shunt resistor comprises a dielectric support with first and second conductive traces printed in overlying parallel relationship on opposite faces thereof and an electrical connector extending through the support and electrically connecting the traces at one end thereof.

9. A circuit as defined in claim 8 wherein the first and second traces have multiple legs on each of said faces.

10. A circuit as defined in claim 8 wherein shunt resistor comprises third and forth traces electrically continuous with the first and second traces.

11. A circuit as defined in claim 8 wherein the detector is an amplifier.

12. A circuit as defined in claim 8 wherein the detector is a comparator.